

Alligator Hunting Season Report 2016



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F&AP Report 16-05

INTRODUCTION

The successful return of the American alligator (*Alligator mississippiensis*), since its near demise and subsequent listing as “endangered” by the Endangered Species Act in the 1960s, has prompted most Southeastern states to implement hunting seasons to allow the public use of this unique natural resource. The hunts are also seen as an attempt to maintain the number of nuisance alligator complaints at a manageable level. The alligator is currently listed as “threatened,” not because of population numbers, which are decidedly secure, but because of its “similarity of appearance” to other rare and protected crocodilians worldwide. It is estimated that a minimum of 100,000 alligators occur in the state of South Carolina.

The 2016 Public Alligator Hunting Season marked the ninth general alligator hunting season after a closure of nearly 40 years. However, alligators have been legally hunted in South Carolina since 1995 under the Private Lands Alligator Harvest Program. The Private Lands Program was established as a means for large landowners having significant amounts of alligator habitat to manage their alligator numbers on a sustained-yield basis, and included quotas for specific size-class alligators. This year’s public hunt, utilizing a random computer drawing, was open to all applicants, including nonresidents, and was conducted on public and private lands (not enrolled in the Private Lands Program) from the Midlands to the coast.

Because alligators can grow to considerable size, alligator hunters can have others assist them with the taking of an alligator during the season. Everyone who participates must have a South Carolina hunting license, or be under the age of 16. To participate in the public alligator season one must first apply online, be selected, then pay a fee for a permit and harvest tag. The fee for the permit and tag is \$100. In addition, any nonresident hunter or nonresident assistant 16 years of age or older must pay a \$200 nonresident alligator hunting fee. By law, all fees collected for the alligator hunting program are used to support administration of the alligator program in South Carolina, and for research, monitoring, and management of this important and unique natural resource.

HUNTER SELECTION

The public alligator hunt is a limited, lottery-style hunt in which participants are selected in a randomized computer drawing. All potential hunters are required to submit an application online through the Department of Natural Resources (DNR) website (www.dnr.sc.gov) and pay a non-refundable application fee of \$10. A person must be 16 years of age or older to apply for any alligator lottery hunt. There is no age requirement to assist a permitted alligator hunter, although other fees may apply.

The four alligator hunt units (Figure 1) remain unchanged. With the exception of a small portion of Berkeley County located within Lake Marion, county lines bound all hunt units. The allocation of permits for 2016 was 250 per hunt unit based on 1,000 total tags available. Hunters could select the option to be considered for any or all of the units for the computer drawing, but if successful, are only selected to hunt in one unit. After paying the \$100 tag fee, those selected for the hunt are issued a permit and one harvest tag. All alligator harvest tags and permits are issued specifically to the selected hunter and are non-transferrable. The harvest tag is a numbered, permanently locking nylon tag that must be attached to the alligator’s tail immediately after harvest. The permit and tag allow a hunter to take one alligator greater

than 4 foot in total length from either public or private waters in their selected hunt unit; however, no alligator hunting is allowed on certain public lands such as Wildlife Management Areas (except in navigable waters normally open to the general public for hunting), State Parks or Federal properties such as National Wildlife Refuges and their jurisdictional waters.

Two Wildlife Management Area (WMA) properties, Bear Island and Santee Coastal Reserve, were opened for alligator hunting beginning in 2011. These two WMAs are part of a special draw hunt held separately from the regular Public Alligator Hunting Season. Applicants for the WMA Alligator Hunts are required to select an area and a week to hunt on the WMA. Only two hunters per WMA are selected per week, with 4 weeks available, for a total of 16 slots available. If chosen, the applicant is issued a permit and tag that is valid for the WMA and week selected, or at their choosing, could elect to use the tag in the same unit that the specific WMA is located for the remainder of the public alligator season. Bear Island is in the Southern Coastal Unit and Santee Coastal Reserve is located in the Middle Coastal Unit. The cost to apply for the WMA Alligator Hunt is \$15, and the cost for the permit and tag is \$500 for residents and \$800 for nonresidents. A WMA Permit is required of all WMA Alligator Hunters and assistants. Because the two draw hunts are separate, a person could potentially be drawn for both the Public and WMA hunting season. Beginning in 2012, there is the option to purchase an additional tag for a smaller alligator during the WMA hunt. This additional tag is only valid for an alligator from 4-7 feet in length, and only for the chosen WMA during the week selected. Anyone in the hunting party can utilize the additional tag so long as the originally selected hunter is present.

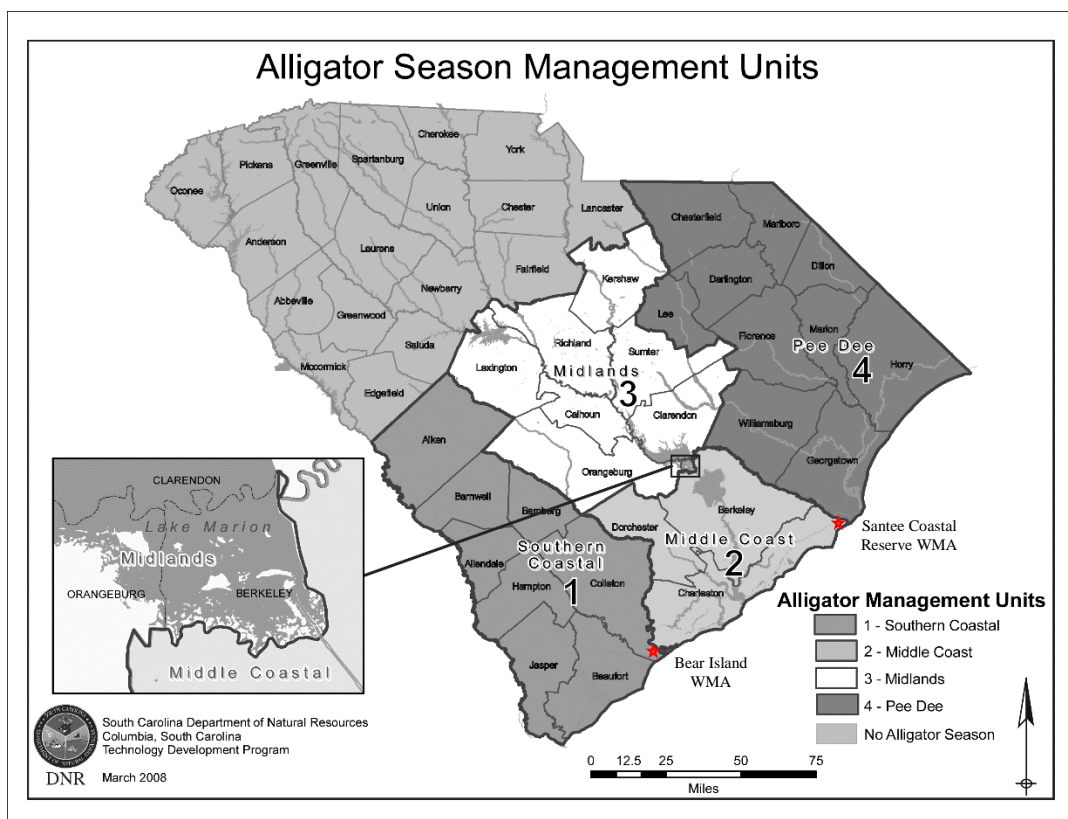


Figure 1. 2016 Alligator Management Units.

Legislation passed during the 2010 legislative session requires that all nonresident alligator hunters pay a *nonresident alligator hunting fee*. This fee is *in addition* to any application, licensing, and permit fees normally required to hunt alligators, regardless of the alligator hunting program. The cost is \$200 and is required of all nonresident hunters, as well as all nonresident assistants that are 16 years of age or older. Thus, the *minimum* cost for a nonresident alligator hunter that receives a permit and tag in the hunt selection is \$350. The fee breakdown would be: \$10 for the application, \$100 for the permit/tag, \$200 for the nonresident alligator hunting fee, and \$40 for a 3-day nonresident hunting license. Nonresident assistants 16 years of age or older would pay a minimum of \$240. This would include the \$200 nonresident fee and a 3-day hunting license (\$40). The *minimum* cost for a nonresident alligator hunter that receives a permit and tag in the WMA hunt selection is \$1,131. The fee breakdown would be: \$15 for the application, \$800 for the permit/tag, \$200 for the nonresident alligator hunting fee, \$76 for the WMA permit, and \$40 for a 3-day nonresident hunting license. Nonresident assistants 16 years of age or older would pay a minimum of \$316. This would include the \$200 nonresident fee, WMA permit (\$76), and a 3-day hunting license (\$40). Nonresident assistants under 16 do not pay any fees. Other states have similar additional nonresident fees, or prohibit nonresident participation altogether.

The lottery selection process began as usual on May 1st and ended on June 15th. A total of 4,558 hunters applied for the 2016 hunt, a decrease of 2.9% from the previous season. The applicants were from 43 different states (including SC) along with one applicant from the Virgin Islands. The number of resident applicants increased slightly to 88.5% of the total applications received for the Public Hunting Season. Of the non-residents, NC and GA residents were 3.9% and 1.1% of the total number of applicants. No other states' applicants were more than 1% of the total.

A total of 224 applications for the WMA Alligator Hunt were received from sixteen different states. The number of applicants increased 6.2% from the previous season. SC residents comprised the majority (80.4%) of the WMA applicant pool, followed by 3.1% from NC, and 2.2% from both OH and PA.

As was the case last season, no one with less than two preference points was selected for the Public Alligator Hunting season. The majority (84.5%) had two preference points. The remaining selected hunters had three (13.5%), four (1.9%), and one applicant had five preference points. Another 282 applicants with two or more preference points were not selected this season or chose the non-draw option. Applicants lose any accumulated preference points once selected for a permit, whether the permit is purchased or not.

A total of 863 of the 1,000 hunters selected (86.3%) in the 2016 season completed the application process and were issued a harvest tag and permit. The tag purchase rate was up from last year's rate of 79.8%. Nevertheless, this purchasing rate still remains at or above the predicted fulfillment rate of 75-80% relative to the targeted tag distribution. Currently, the targeted allotment is 1,000 tags, a number which is subject to change in future years based on harvest and/or alligator survey data.

The 2016 Alligator Hunting Guide, (<http://www.dnr.sc.gov/wildlife/alligator/pdf/2016gatorguide.pdf>), was updated to reflect changes from the previous season.

The 2016 season began at noon on September 10th and ended at noon on October 8th.

SEASON RESULTS

All permitted alligator hunters were required to report their hunting activities by November 1st, regardless of whether or not they actually went alligator hunting in South Carolina. Reporting compliance for 2016 was 73.2% for all fully permitted hunters. Those hunters who did not report are not eligible to apply for the next hunting season.

The total number of alligators reported taken during the 2016 public alligator hunting season was 386, an increase of 67 alligators (21.0%) from the 2015 season. This represents a success rate of 44.7% for all fully permitted hunters (n=863) and 38.6% for all selected applicants (n=1,000). The Southern Coastal unit had the most alligators taken at 111 (28.8% of total harvest), followed by the Middle Coastal with 105, Pee Dee with 91, and the Midlands Unit with 79 alligators (Table 1).

Table 1. The number of alligators taken and percent of total alligators harvested for the 2016 season by Hunt Unit.

Hunt Unit	Number of Alligators Taken	Percent of Total Harvest*
Middle Coastal	105	27.2%
Midlands	79	20.5%
Pee Dee	91	23.6%
Southern Coastal ^a	111	28.8%
Total	386	100.0%

*Percentages may not be equal due to rounding of decimal numbers.

^a includes two alligators taken by WMA hunters

Fully permitted hunters (n=863) who actually reported going hunting (n=589) had a success rate of 65.5%. The number of hunters that hunted but were unsuccessful was 212 (26.2%). Another 3.8% of hunters (n=33) that paid their \$100 tag fee reportedly did not go alligator hunting this season. The *reported* participation rate was highest in the Midlands unit with 60.8% of *all selected hunters* (n=250) for the unit going on at least one alligator hunting trip. Participation rates for the other units were as follows: Middle Coastal unit at 60.4% (n=250), Southern Coastal at 59.6% (n=250), and the Pee Dee at 59.2% (n=250). Statewide, the participation rate was 68.3% (Figure 2).

Of *all participating hunters reporting*, the Midlands hunters averaged 2.9 days afield (SD=2.1), and Middle Coastal hunters averaged 2.6 hunting trips (SD=2.2) per hunter, followed by the Pee Dee at 2.5 days (SD 1.9). Lastly, hunters in the Southern Coastal averaged 2.1 days per afield (SD=1.7). Collectively, all hunters averaged 2.5 days hunting alligators (SD=2.0).

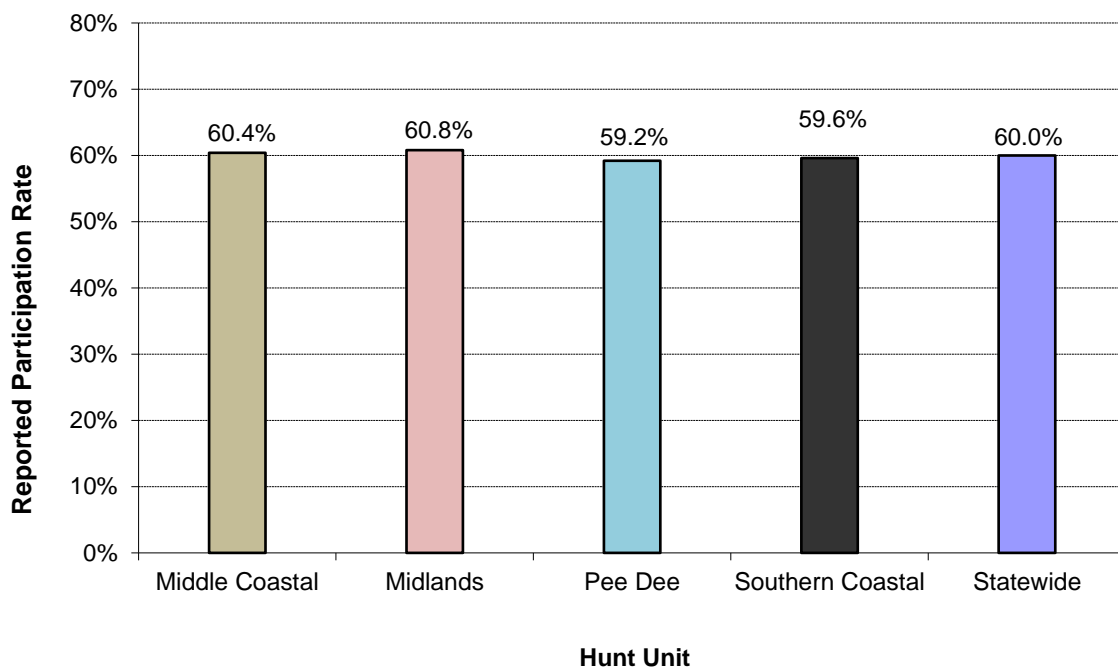


Figure 2. Reported participation rate (at least one trip afield) for all hunters selected to participate in the 2016 alligator season by Hunt Unit.

Considering *only the successful hunters*, the most efficient hunters were from the Southern Coastal unit. These hunters went afield 217 times for an average of 1.9 trips per alligator killed (SD=1.5). Successful Middle Coastal hunters went, on average, 2.4 days for each alligator taken (SD=2.2) and both Midlands and Southern Coastal hunters averaged 2.5 days afield (SD=1.8 and 2.0, respectively). On average, all successful hunters spent 2.3 days hunting for every alligator taken (SD=1.9).

The average size of all alligators reported taken during the 2016 public season was 8.7 feet (SD=1.9). The average size of alligators taken in the Midlands was 9.2 feet (SD=2.1), followed by the Middle Coastal unit at 8.9 feet (SD=1.9). The Pee Dee unit averaged 8.7 feet (SD=1.8), and lastly the Southern Coastal averaged 8.2 feet (SD=1.8) (Figure 3). Four alligators were reported to be 13 feet or greater (1.0% of total), one more than last year (Figure 4). According to harvest reports, the largest alligator taken this season was 13'5" from the Pee Dee unit. The smallest alligator reported was 4'10", and taken from the Southern Coastal unit.

Twenty-six (6.7%) alligators taken were reported to be less than 6 feet in length. The number of smaller alligators (six-feet and smaller) increased from last year from fifty-six in 2015 to sixty-seven (17.4% of total) this season. The greatest number (36.7%) of larger alligators, those animals *10 feet and larger*, came from the Middle Coastal. Of the *very large* alligators, the Midlands (n=12) had a slightly larger number of the total alligators taken that were in the 12 or 13 foot-class, followed closely by the Middle Coastal unit (n=10). The Pee Dee unit had four animals in the 12 to 13 foot-class, with the Southern

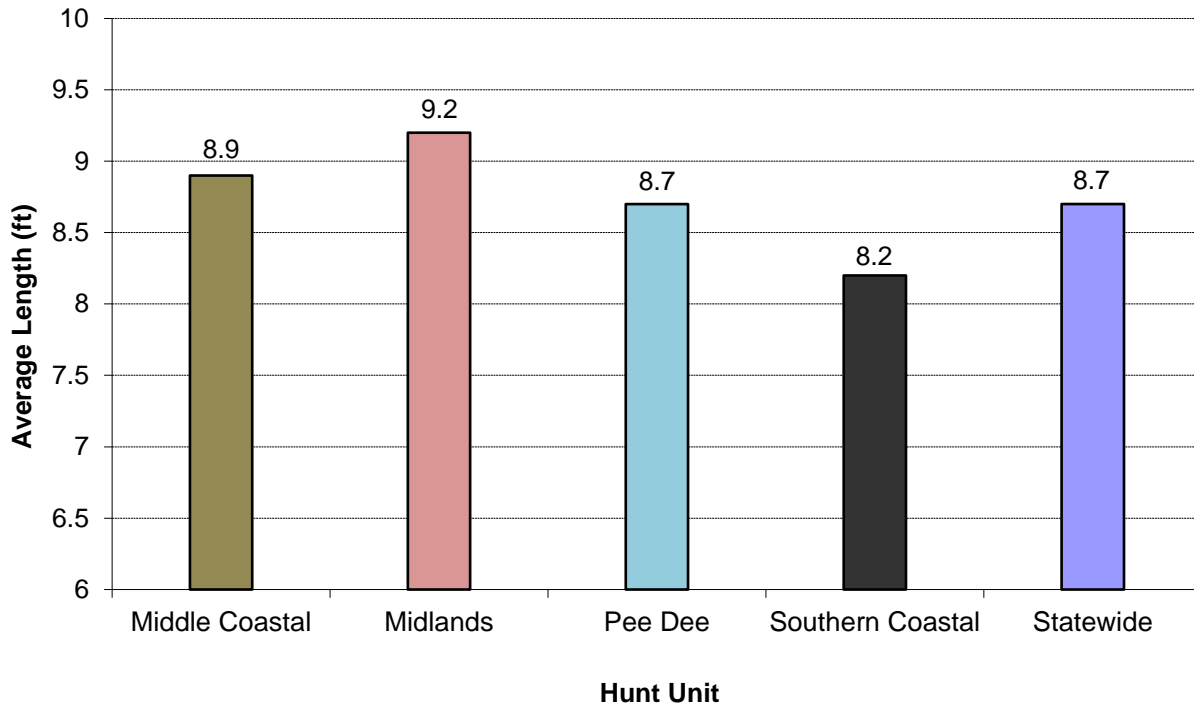


Figure 3. Average size of alligators taken during the 2016 Public Hunting Season by Hunt Unit.

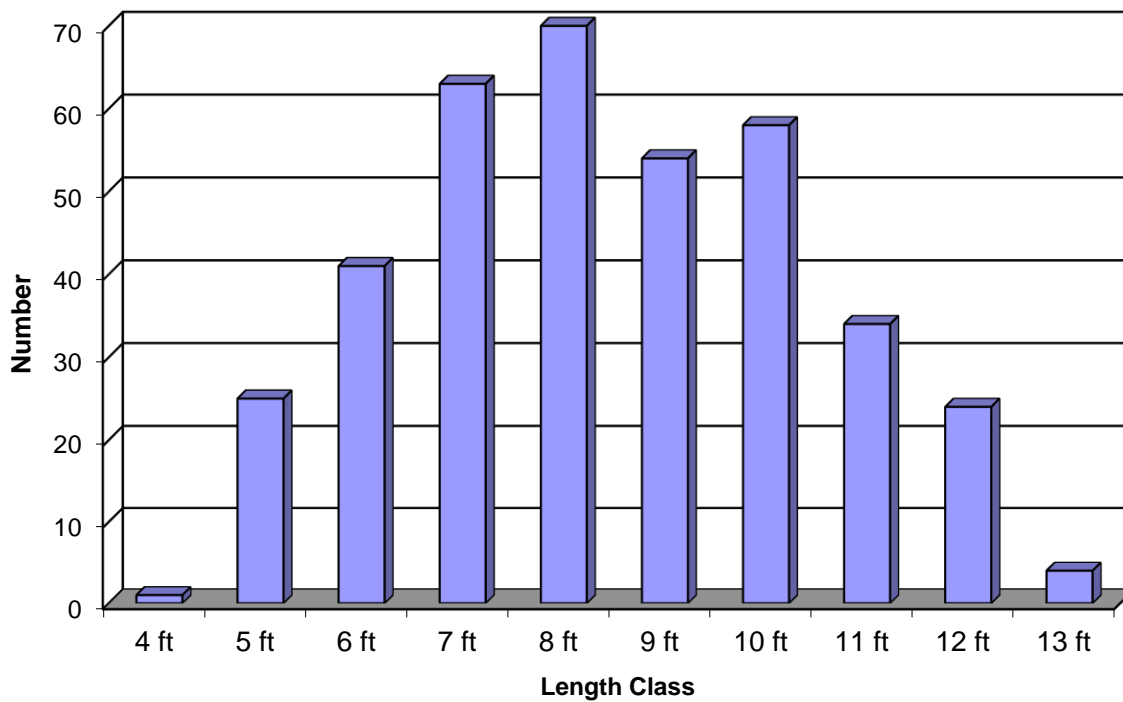


Figure 4. Number of alligators taken by size class during the 2016 Public Hunting Season.

Coastal having two. Overall there was an 8.8% increase in the number of alligators taken in all size classes greater than 8-foot. (Table 2; also see Appendices).

Alligator harvest was reported from nineteen coastal plain counties, one more than last season. Reported take by county revealed that three counties: Berkeley, Georgetown, and Colleton, comprised 63.7% of the public alligator harvest (Table 3; Appendix V). Those same counties have accounted for approximately 60% to 70% of the total harvest since the 2009 season. The largest alligators (10'+) also came from four counties that were in three different hunt units: Berkeley (n=39), Georgetown (n=22), Clarendon (n=14), and Colleton (n=13). On average, the largest alligators came from Florence County, followed by Clarendon, Calhoun, and Berkeley. (Figure 5).

Table 2. Number of alligators taken by size class and Hunt Unit during the 2016 Public Hunting Season.

Hunt Unit	Alligator Size Class ^a									
	4'	5'	6'	7'	8'	9'	10'	11'	12'	13'
Middle Coastal	0	6	9	14	18	11	25	9	8	2
Midlands	0	6	7	7	18	14	6	9	11	1
Pee Dee	0	2	11	20	18	13	15	8	3	1
Southern Coastal ^b	1	11	14	22	28	16	12	8	2	0
Totals	1	25	41	63	82	54	58	34	24	4
Change from 2015	-1	+7	+5	+8	+33	-1	+13	-6	+8	+1

^a Shaded area denotes "larger" alligator size classes.

^b Includes two alligators taken by WMA hunters in their respective hunt unit.

Table 3. 2016 Alligator harvest and percent of total alligator harvest by hunt unit and county.

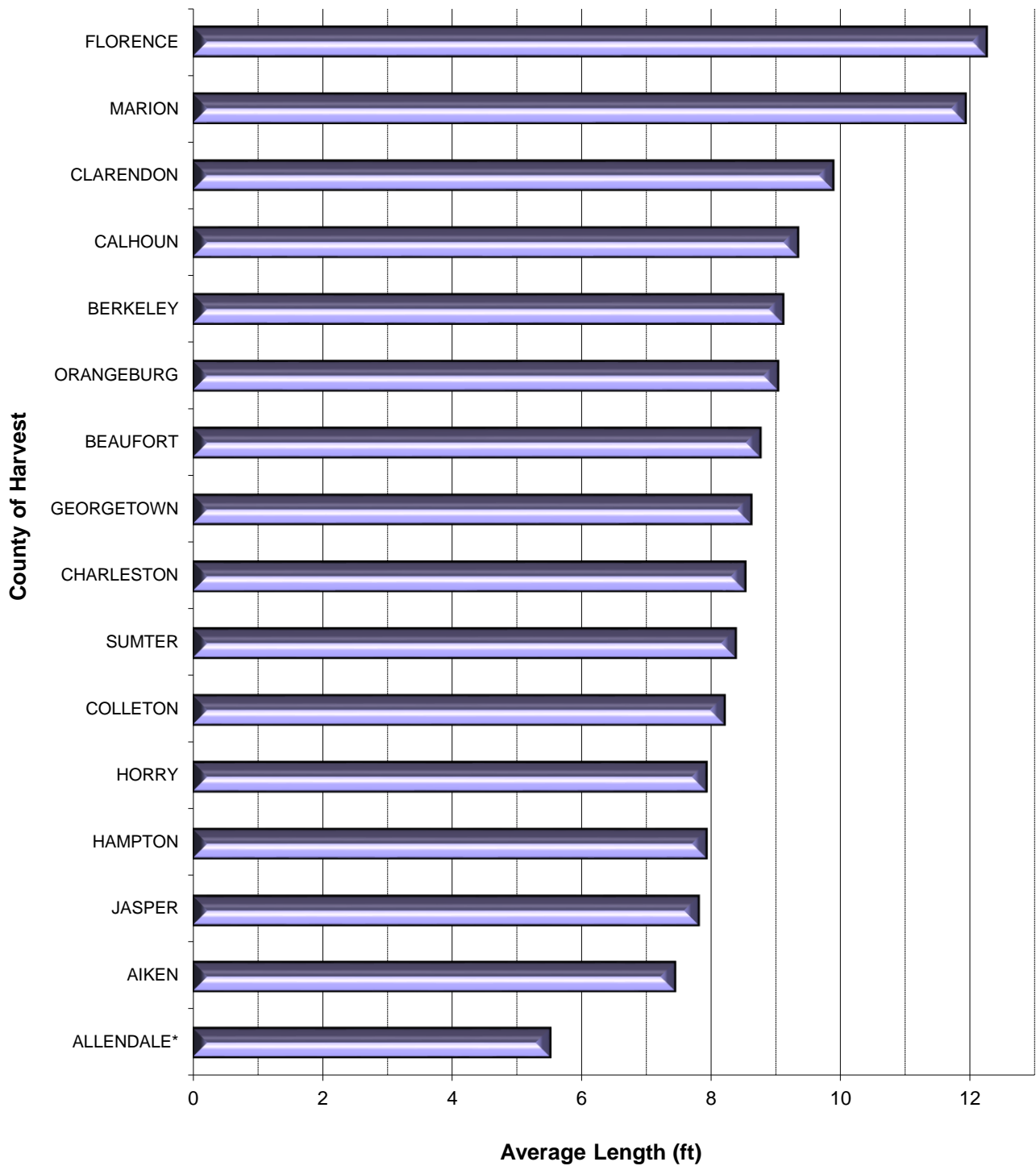
Hunt Unit	County	Number of Alligators Taken	Percent of Total Harvest*
MIDDLE COASTAL		105	27.2%
	Berkeley ^a	86	22.3%
	Charleston ^b	17	4.4%
	Dorchester	2	0.5%
MIDLANDS		79	20.5%
	Orangeburg	31	8.0%
	Clarendon	27	7.0%
	Calhoun	9	2.3%
	Berkeley ^d	8	2.1%
	Sumter	4	1.0%
SOUTHERN COASTAL ^c		111	28.8%
	Colleton	67	17.4%
	Beaufort ^c	32	8.3%
	Hampton	4	1.0%
	Jasper	4	1.0%
	Aiken	2	0.5%
	Allendale	1	0.3%
	Unknown	1	0.3%
PEE DEE		91	23.6%
	Georgetown	85	22.0%
	Horry	3	0.8%
	Marion	2	0.5%
	Florence	1	0.3%
TOTAL		386	100%

^a Does not include the portion of Berkeley County in the lower end of Lake Marion.

^b Includes the portion of Berkeley County in the lower end of Lake Marion.

^c Includes two alligators taken by WMA hunters in their respective hunt unit.

*Percentages may not be equal due to rounding of decimal numbers.



*Represented by only one alligator.

Figure 5. Average length of alligators reported taken during the 2016 Public Harvest Season by county.

Reported meat yield from all harvested alligators was 10,110lbs, a 7.8% increase from 2014.

The most commonly reported alligator capture technique was a hook and line, with nearly three-quarters (73.5%) of all successful hunters using this as a primary capture device. Fifteen percent of hunters used a crossbow, followed by a bow (5.9%), and a harpoon (5.6%) (Figure 6). A total of 12.1% of the successful hunters utilized a guide's services, down 2.6% from the previous season.

Alligator hide utilization (sold, kept, or given away) was reported at 75.8%.

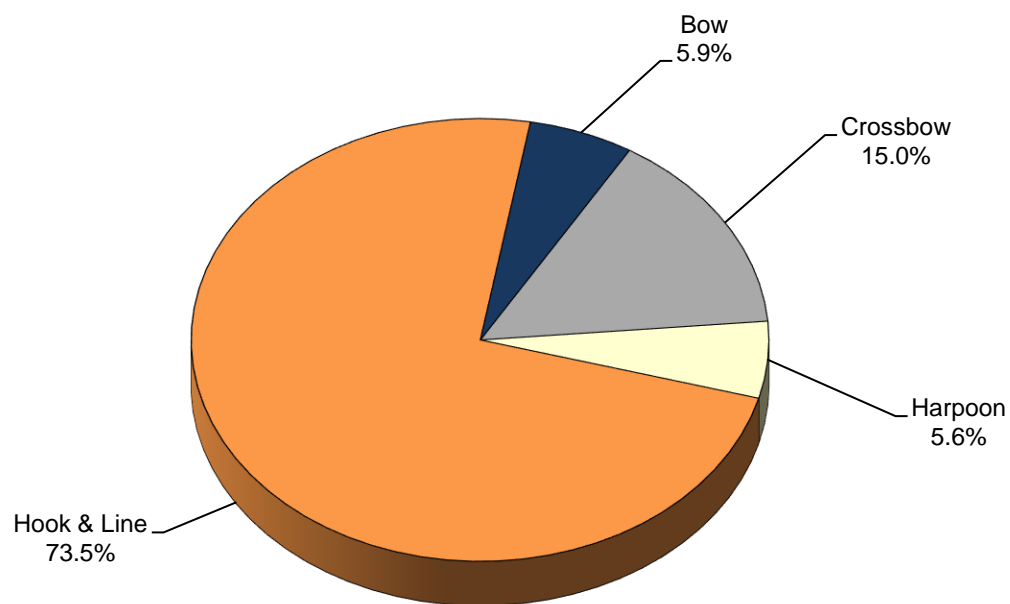


Figure 6. Reported initial capture device utilized during the 2016 Alligator Season.

SEASON RESULTS – WILDLIFE MANAGEMENT AREAS

Starting with the 2012 season, WMA alligator permittees were given the option to purchase a "smaller" alligator tag in addition to the normal WMA alligator tag. This tag allowed the take of an additional alligator between four and seven foot in length. Thus, with sixteen WMA permits available, up to a total of thirty-two total tags were offered to selected WMA hunters if the additional tag was purchased. Six of the sixteen additional "smaller" alligator tags offered to WMA hunters were purchased this season.

Four alligators were taken from Bear Island WMA and six from Santee Coastal Reserve (Table 4). The average size for alligators on Bear Island WMA using the normal WMA tag exceeded the public hunting average of 8.7 feet. Bear Island alligators averaged 10.0 feet and Santee Coastal WMA averaged 7.6 feet. The largest alligator taken from Bear Island was 11'2", the largest on Santee Coastal Reserve was 10'6".

While the normal WMA tag allows the hunter to take an alligator from the WMA during the week assigned, this tag can also be used in the same Public Alligator Hunt Unit where the WMA is located for the entire season until the tag is utilized. Two Bear Island WMA hunters took advantage of this option this season and were successful in catching their alligator within the confines of the overall Southern Coastal hunt unit.

Table 4. 2016 WMA Alligator harvest by week and management area.

Wildlife Management Area	Week	Number of Alligators Taken
Bear Island WMA		4
	First	3
	Second	0
	Third	1
	Fourth	0
Santee Coastal WMA		6
	First	3
	Second	0
	Third	0
	Fourth	3

DISCUSSION AND RECOMMENDATIONS

The number of applicants for this season's alligator hunt decreased. This year's applicants were down 29.3% from the all-time high back in 2012 (n=6640), arguably at the height of various alligator-related TV shows. It is also possible that for many people, alligator hunting is a one and done kind of activity. Certainly there are hunters that apply annually; however, there is just as likely a segment of the hunting community that wants to alligator hunt just once, then drop out of the applicant pool altogether.

This year's application process was fairly uneventful. All notifications were delivered via email. There continue to be a few nagging issues with application screens that could be less confusing as well as making it harder to create a new customer id number. The third-party vendor has been less than helpful in correcting some of these deficiencies that continue to persist.

Another unanticipated event took place this season near the end of the hunting period. The previous season (2015) saw historical rainfall and flooding beginning in early October and impacted the remainder of the hunting season for many of the hunt units. The 2016 season saw Hurricane Matthew approach the South Carolina coast in early October and certainly impacted some hunters' ability to hunt a few more days. Evacuations of the lower coast most likely hindered some alligator hunters planned hunts, especially during the last weekend of the season. Nevertheless, even given the potential loss of hunting opportunity from Hurricane Matthew, success rates for all selected hunters increased from the previous season, from 31.9% to 38.6%, above the long-term average of 33.6%, with the present season excluded (Figure 7).

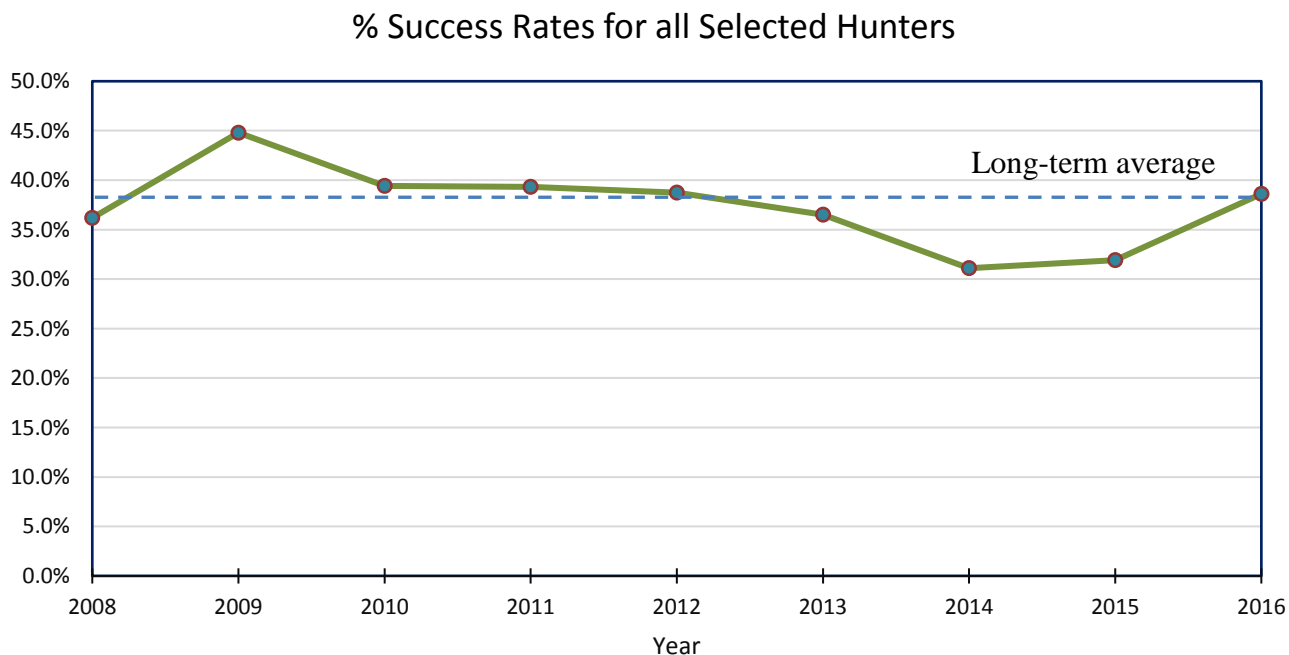
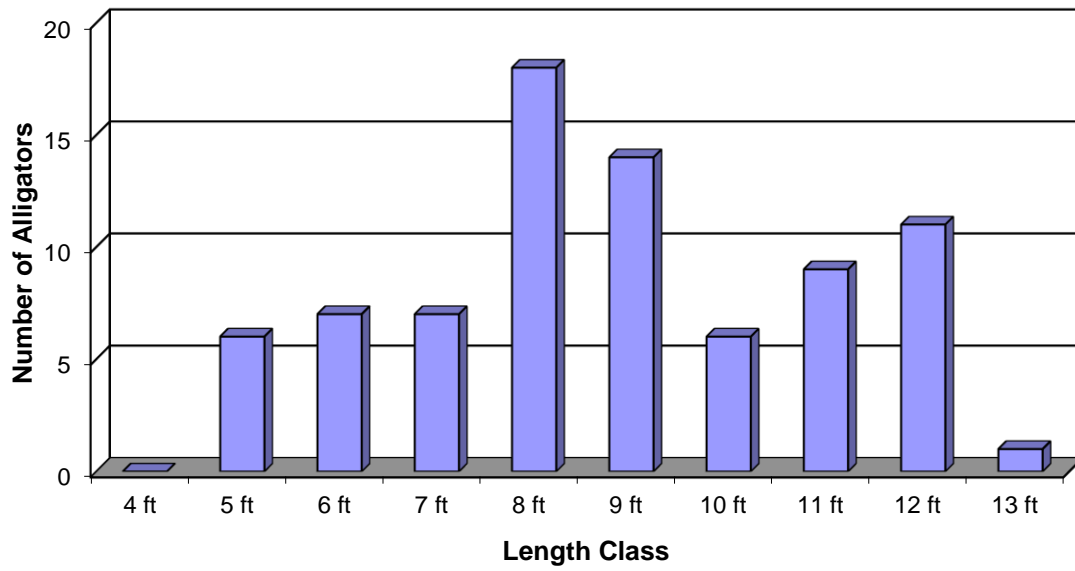


Figure 7. Percent success rate for all selected hunters, by season.

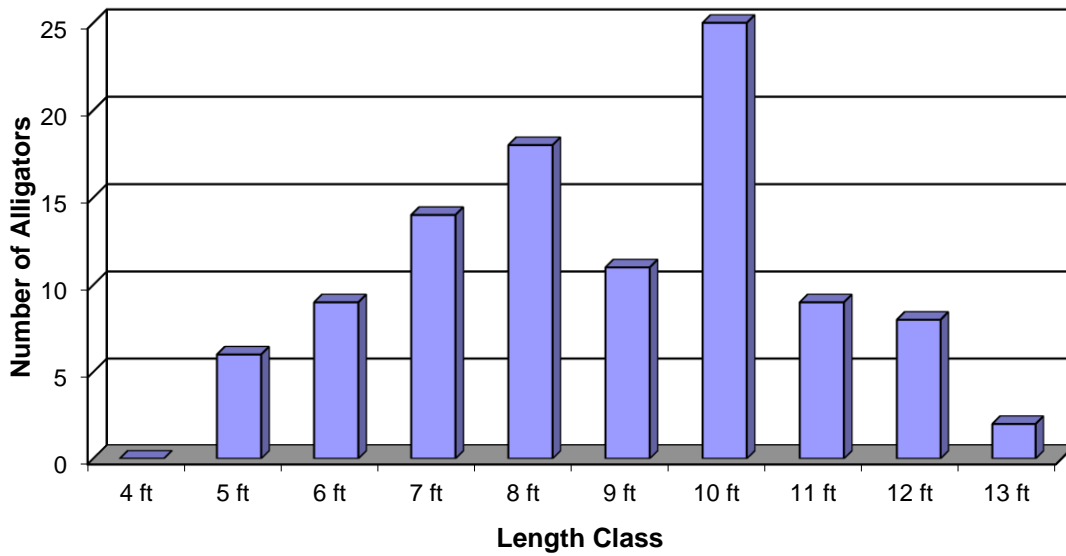
The harvest of large alligators appears to be holding steady after concerns from a couple years ago that too many very large alligators were being removed from the population. There is still uncertainty as to how many of these animals can be taken annually on a sustainable basis, but there is some encouragement that these alligators are still available for hunters.

A long-term monitoring project in cooperation with Clemson University is scheduled to conclude in 2017 with the desired outcome of being able to make better management decisions based on alligator survey data. This may or may not impact the number of tags allocated to hunters in subsequent years; however, for the 2017 season, no changes in the hunting season tag allotments are anticipated.

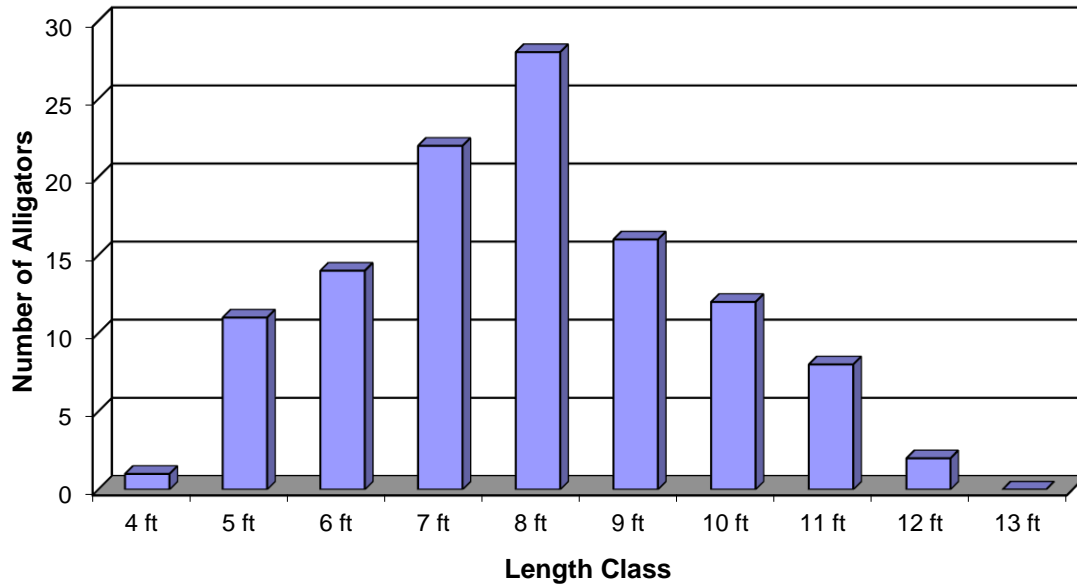
Appendix
2016 Harvest Graphs
by
Public Alligator Harvest Hunt Unit
&
County of Harvest
&
Cumulative Harvest Totals by Year



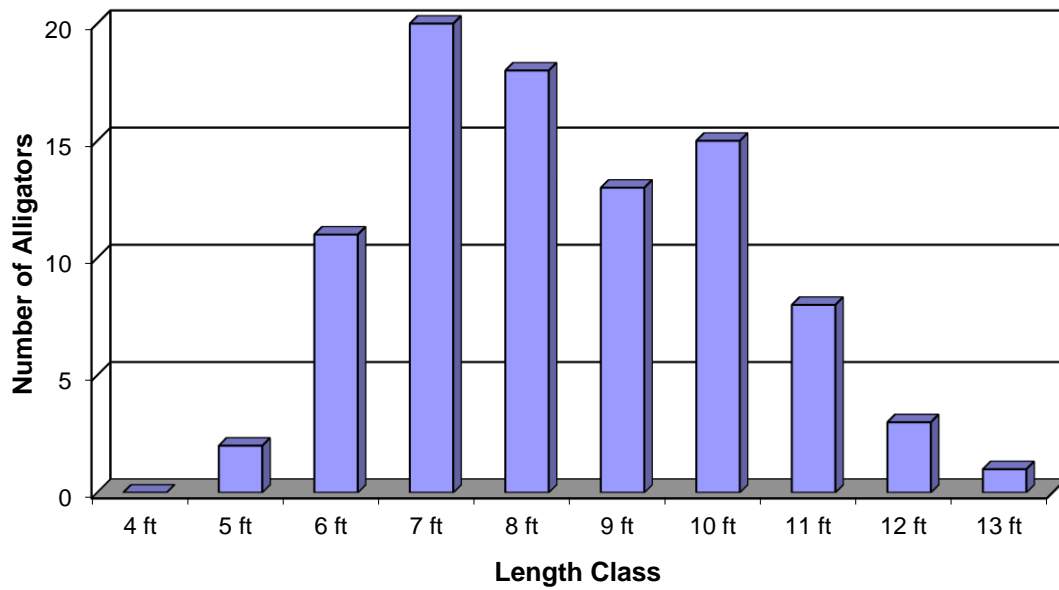
Appendix I. Number of alligators taken during the 2016 Public Hunting Season by size class for the Midlands Hunt Unit.



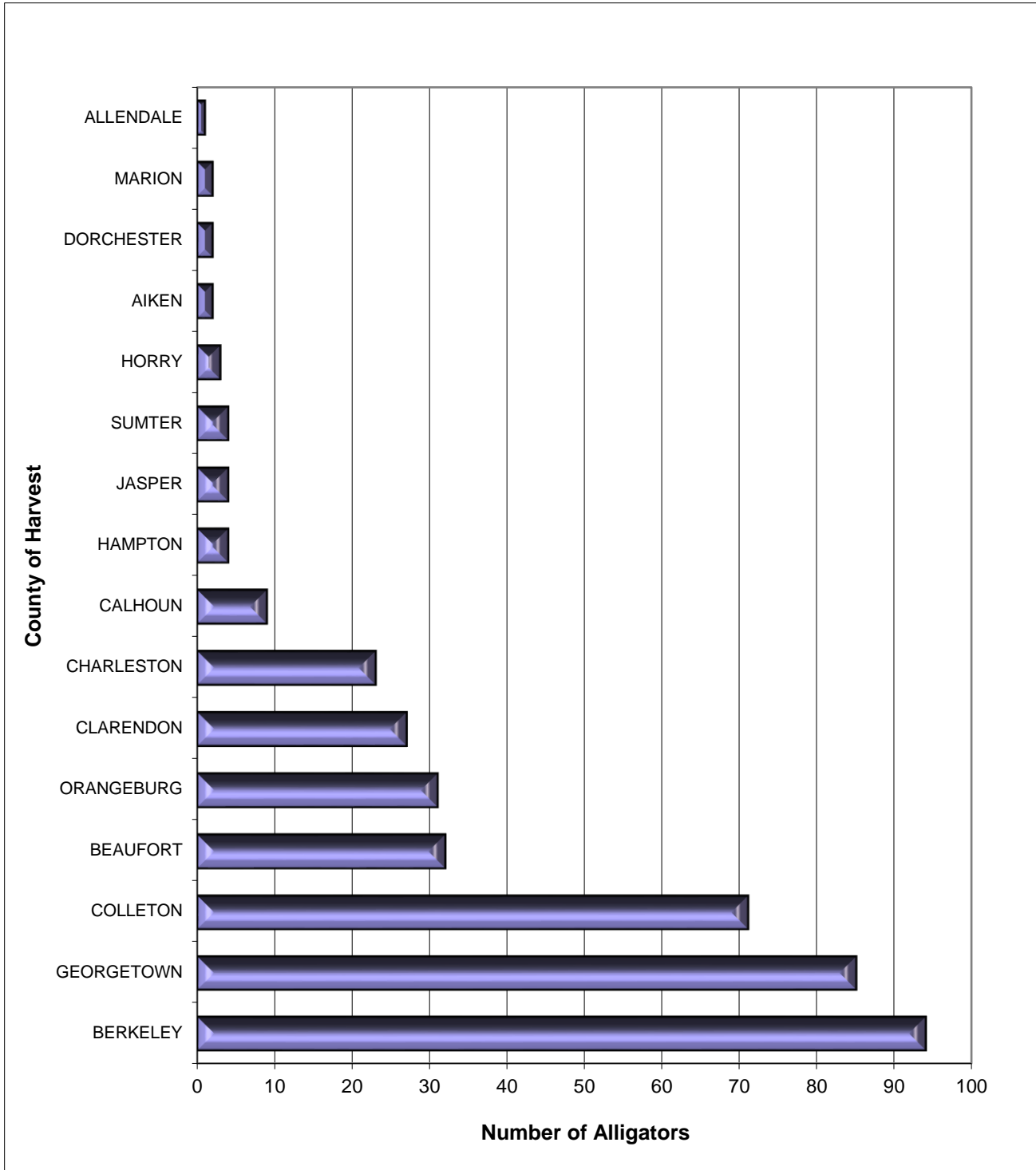
Appendix II. Number of alligators taken during the 2016 Public Hunting Season by size class for the Middle Coastal Hunt Unit.



Appendix III. Number of alligators taken during the 2016 Public Hunting Season by size class for the Southern Coastal Hunt Unit.



Appendix IV. Number of alligators taken during the 2016 Public Hunting Season by size class for the Pee Dee Hunt Unit.



Appendix V. Number of alligators taken during the 2016 Public Hunting Season by county of reported harvest.

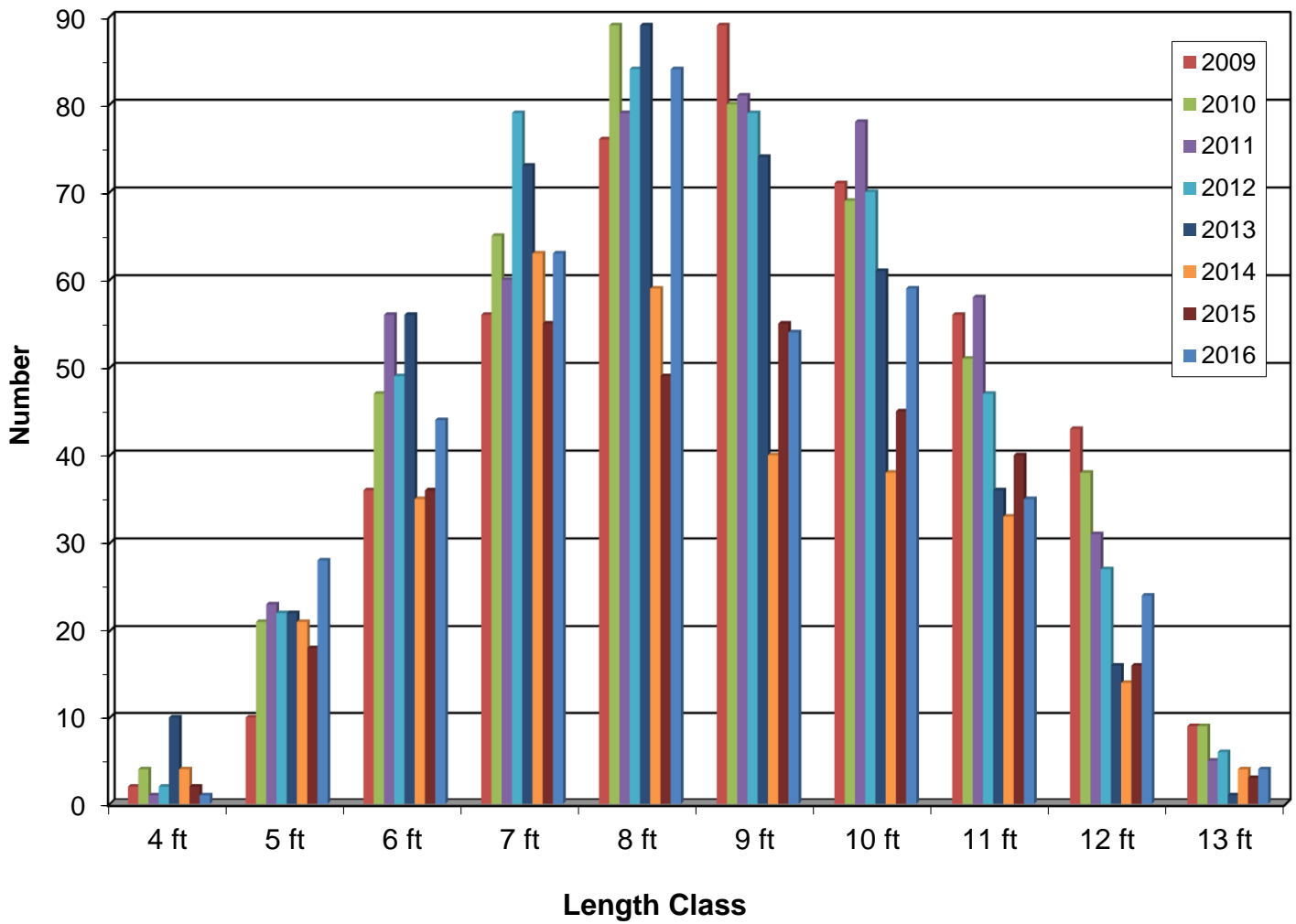
Appendix VI. Number of alligators taken during all years of the Public & WMA Hunting Season, by Hunt Unit.

Hunt Unit	Year									
	2008	2009	2010	2011	2012	2013	2014	2015	2016	Total
Middle Coastal ^a	121	147	117	140	134	128	88	88	108	963
Midlands	87	93	104	87	90	82	57	74	79	674
Pee Dee	60	104	111	120	115	121	85	69	91	785
Southern Coastal ^b	94	108	141	136	144	121	81	102	118	927
Annual Total*	362	452	473	483	483	452	325	333	396	3,759

* includes alligators taken the WMA Alligator Hunting Program beginning in 2011.

^a includes alligators taken at Bear Island WMA

^b includes alligators taken at Santee Coastal Reserve WMA



Appendix VII. Number of alligators taken during all years of the Public Alligator Hunting Seasons, by size class.